

RESOLUTION #38

MANUFACTURED HOUSING INSTALLATIONS

BE IT RESOLVED BY THE STATE HOUSING BOARD OF THE STATE OF COLORADO;

THAT PURSUANT TO ' 24-32-3301 et seq C.R.S. as amended, the State Housing Board of the State of Colorado (the "Housing Board") repeals and readopts Resolution #37, Manufactured Housing Installations; and

THAT PURSUANT TO ' 24-32-3301 et seq C.R.S. as amended, the State Housing Board adopts the nationally recognized codes as cited in SCHEDULE "B" as the "Colorado Manufactured Housing Installation Code" that are the Division of Housing responsibility; and

THAT PURSUANT TO ' 24-32-3301 et seq C.R.S. as amended the State Housing Board states the basis and purpose of these rule changes is to update the current minimum construction and safety code for "Manufactured Housing Installations"; and

THAT PURSUANT TO ' 24-32-3301 et seq C.R.S. as amended, the State Housing Board establishes standards, to the extent allowed by the state constitution, Article 50 of the "State Personnel System Act", and the rules promulgated by the Personnel Board, for private inspection and certification entities to perform the Colorado Division of Housing' certification and inspection of Manufactured Housing Installations; and

THAT PURSUANT TO ' 24-32-3301 et seq C.R.S. as amended, the State Housing Board states that "Manufactured Housing Installation" installers shall have the option to contract with the Colorado Division of Housing or an authorized inspection agency to perform inspection and certification functions where a local jurisdiction does not have exclusive inspection agency rights; and

The Colorado Housing Board repeals and readopts these rules and regulations to be administered and enforced by the Colorado Division of Housing (the Division of Housing).

RULES AND REGULATIONS

SECTION 1: SCOPE

Every manufactured home installed after the effective date of these regulations that is installed in a temporary or permanent location and is designed and commonly used for occupancy by persons for residential purposes, must display an insignia issued by the Division of Housing, certifying that the unit is installed in compliance with the standards adopted in Schedule "B," which is incorporated herein and made a part of these Rules and Regulations by reference, and all other requirements set forth by this resolution.

Temporary installations for the purpose of home display, which will be relocated to another location prior to use as a residence, are exempted from these rules and regulations.

The State Housing Board states that the Program Manager, Housing Technology and Standards Section, Colorado Division of Housing, 1313 Sherman Street, Room 518, Denver, Colorado, 80203, will provide information regarding how the codes adopted in Schedule "B" may be obtained or examined. Incorporated material may also be examined at any state publications depository library.

SECTION 2: DEFINITIONS

"Certificate of Occupancy" means a certificate issued by the Division of Housing for the installation of a manufactured home that is in compliance with the manufactured home installation requirement. The certificate of installation shall be referred to as the "Insignia."

"Certified Inspector" means a local jurisdiction, individual, private firm, housing inspector, Colorado licensed engineer or architect who has been approved by the Division of perform or enforce installation inspections.

"Certified Installer" means an installer of manufactured homes who is registered with the Division of Housing, has installed at least five manufactured homes in compliance with the manufacturer's instructions or standards created by the Division of Housing and is currently approved as a certified installer by the Division.

"Conflict of Interest" means when there is personal or private interest(s) sufficient to influence or appear to influence the proper exercise of duties and/or responsibilities.

“Division” means the Division of Housing.

“Insignia” means a certificate of installation issued by the Division of Housing to indicate compliance with the manufactured home installation regulations established by the State Housing Board.

“Installation” means the placement of a manufactured home on a permanent or temporary foundation system. Such term includes, without limitation, supporting, blocking, leveling, securing and anchoring such home and connecting multiple sections of such home.

“Installer” means any person that attaches the manufactured unit sections together and ties the home to its foundation support and anchoring system.

“Installer’s Certificate” means a notice when posted on the site of an installation that the installer has made application to install a manufactured home and has received authorization to install. The installer’s certificate shall be referred to as the Installation Authorization.

“Manufactured Home” means any pre-constructed building unit or combination of pre-constructed building units, without motive power, where such unit or units are manufactured in a factory or at a location other than the residential site of the completed home, which is designed and commonly used for the occupancy by persons for residential purposes, in either temporary or permanent locations and which unit or units are not licensed as a vehicle. Manufactured home includes mobile homes, manufactured homes built to the HUD standards, and factory-built units built to the building code standards adopted by the Division.

“Manufacturer” means any entity that constructs or assembles a manufactured home in a factory.

“Owner” means the owner of a manufactured home or property.

“Participating Jurisdiction” means a local governmental entity which has agreed to administer and inspect manufactured housing installations within the legal boundaries of the jurisdiction.

“Registered Installer” means an installer who has registered with the Division and is in compliance with the manufactured home installation program requirements.

SECTION 3: INSTALLERS OF MANUFACTURED HOMES - REGISTRATION

Manufactured Home installers in this state shall first register with the Division. The installer shall be responsible for supervising all employees and for the proper and competent performance of all employees working under his or her supervision.

Installation by Owners

A person who owns the manufactured home or the real property where the home is to be installed, is not required to register as an installer with the Division but shall comply with all provisions of these regulations other than registration provisions.

A person who installs more than one manufactured home in any twelve-month period either owned or on real property owned by such person must register as an installer and shall comply with all registration provisions.

Registered Installers

In order to be registered as a manufactured home installer, an applicant shall be at least eighteen years of age.

An application for registration or certification as a manufactured home installer, whether initial or renewal, shall be submitted on a form provided by the Division and shall be notarized and verified by a declaration signed under penalty of perjury by the applicant. The Division shall make the application and declaration available for public inspection.

At the same time that an application for registration is filed, the following must be submitted:

- (a) Proof in the form of a copy of a valid drivers license or certificate of birth that the applicant is at least eighteen years of age; and
- (b) Furnish written evidence of a minimum six months of installation experience under direct supervision of a registered or certified installer; or equivalent training; or experience acceptable to the Division; or complete a home study course; and pass an installation program exam; and

- (c) Carry and provide proof of contractor's liability insurance in an amount not less than one hundred thousand dollars (\$100,000.00). The insurance policy shall contain a provision for the immediate notification of the Division upon cancellation; and
- (d) A letter of credit, certificate of deposit issued by a licensed financial institution, or surety bond issued by an authorized insurer in the amount of ten thousand dollars (\$10,000.00) for the performance of installations pursuant to the manufacturer's instructions or standards promulgated by the Division. A provision shall be included for the immediate notification of the Division upon cancellation.

Persons employed by a registered or certified installer, as well as persons employed by a legal or commercial entity employing a registered or certified installer, when performing installation functions under the direct on-site supervision of such installers are not required to register. The registered installer shall be responsible for supervising all employees and for the proper and competent performance of all employees working under his or her supervision.

A registration issued pursuant to this section shall be valid for one year from the date of issuance and shall not be transferred nor assigned to another person. If any of the application information for the registered installer changes after the issuance of a registration, the registered installer shall notify the Division in writing within thirty days from the date of the change. The Division may suspend, revoke, or deny renewal of a registration if the registered installer fails to notify the Division of any change in the application.

Any registered or certified installer seeking to renew registration shall, at the time of applying for renewal, provide proof of liability insurance and letter of credit, certificate of deposit, or surety bond to run concurrent with the registration period.

Registered installers shall allow and pay for periodic oversight inspections by the Division of Housing to monitor the installer's performance in complying with the program requirements and applicable installation standards. Based upon finding(s) of inadequate performance, the frequency of inspections may be increased as determined by the Division of Housing procedures.

The Division, or a Certified Inspector at the request of the Division, may at the Division's sole discretion, inspect the installation of any manufactured home performed by the Registered Installer.

SECTION 4: CERTIFIED INSTALLERS

Any registered installer who has performed five installations that have passed inspection by the Division or certified inspectors may apply to the Division for certification. The Division shall not charge a fee for certification of installers.

The Division may certify any installer who provides evidence of five or more installations of manufactured homes performed by such installer. Evidence of installation shall include copies of all inspection reports made for each installation made by the Division or a certified installation inspector. If in the judgment of the Division, such installer has demonstrated the ability to successfully complete installations of manufactured homes in accordance with the requirements, certification will be granted.

If the review of the evidence of the installations does not clearly demonstrate the ability to successfully complete installations in compliance with the requirements, the division may require additional installations to be performed and reviewed prior to granting certification.

A certified installer may purchase from the Division, manufactured home installation certification insignias. These insignias will be completed by the certified installer upon completion of the installation of the manufactured homes and attached to the manufactured home in compliance with Section 11 of this Resolution. The certified installer shall make required insignia reports to the Division.

A certified installer shall be authorized to purchase insignias, to post certified installer installation authorization on the installation site, and to affix insignias after the installation is complete. Installations by a certified installer do not require an inspection by the division or a certified inspector. The Division or certified inspector at the request of the Division, may at the Division's sole discretion, inspect the installation of any manufactured home performed by a certified installer.

Certified installers shall allow and pay for periodic oversight inspections by the Division of Housing to monitor the installer's performance in complying with the program requirements and applicable installation standards. Based upon finding(s) of inadequate performance, the frequency of inspections may be increased or certification revoked as determined by the Division of Housing procedures.

SECTION 5: CERTIFIED INSTALLATION INSPECTORS

The Division may authorize independent contractors to perform inspections and enforcement of proper installation of manufactured homes. Enforcement shall include issuance of installation authorizations and permanent attachment of insignias signifying compliance with the manufactured home installation regulations. The Division may provide training for independent contractors. All independent contractors shall be certified to perform installation inspections by the division.

Applicants for certified installation inspector shall furnish written evidence of a minimum six months manufactured housing inspection experience; or equivalent training; or related experience acceptable to the Division; or State of Colorado professional licensing in engineering or related construction fields.

Applicant may successfully complete a certified installation home study course as substitute for inspection experience, training, or professional licensing. Home study applicants must pass an installation program exam prior to certification as a manufactured housing installation inspector.

Inspector certifications will remain valid for one year and must be renewed.

Where a jurisdiction has established a building department, that governmental body may make a written request to be the exclusive independent installation inspection agency within their legal boundaries. When granted, all manufactured home installation inspections will be made by that participating jurisdiction's certified installation inspectors or by certified installation inspector under contract to the jurisdiction. Division inspectors or Division designated independent inspectors shall make inspections within the jurisdiction in response to a complaint.

A certified inspector shall not make inspections where the inspector has a conflict of interest that may impair his ability to make fair and impartial inspections.

Certified inspectors shall allow and pay for periodic oversight inspections by the Division of Housing to monitor the installer's performance in complying with the program requirements and applicable installation standards. Based upon finding(s) of inadequate performance, the frequency of inspections may be increased as determined by the Division of Housing procedures.

The division may revoke the certification of any inspector who fails to maintain the minimum requirements for the certification, has a conflict of interest impairing his ability to make impartial inspections or if investigation of complaints by the division reveals that the inspector has repeatedly failed to enforce the requirements of the program. The Division, or a Certified Inspector at the request of the Division, may at the Division's sole discretion, inspect the installation of any manufactured home inspected by the Certified Inspector.

SECTION 6: STANDARDS

The Division shall adopt standards to be used state wide for the installation, inspection and enforcement of the installation of manufactured homes.

A local government unit may not adopt less stringent standards for the installation of a manufactured home than those adopted by the Division. A local government unit may not, without express consent by the Division, adopt different standards than the standards adopted by the Division for the installation of a manufactured home. Nothing in this section shall preclude a local government unit from enacting standards for manufactured homes concerning unique public safety requirements, such as weight restrictions for snow loads or wind shear factors, as otherwise permitted by law.

Any installation of a manufactured home in this state shall be performed in strict accordance with the applicable manufacturer's installation instructions. Where the manufacturer's instructions are not available, installation shall be in accordance with the alternate standards adopted by the Division.

Upon written request, the Division will consider modifications to the standards and/or alternate materials and methods of construction. The Division will require that sufficient evidence or proof be submitted to support and substantiate the modification and/or alternate request. The Division may approve any such modification and/or alternate, provided the Division finds that the proposed modification and/or alternate conforms with the intent and purpose of the standards and is equivalent in suitability, strength, effectiveness, durability, safety, and sanitation. The approval of any modification and/or alternate by the Division will be made in writing and is required prior to commencing the work in question.

The Division will, as necessary, coordinate inspections by certified inspectors, maintain accurate

record keeping and promote a statewide standard for inspections of manufactured home installations. From time to time, the Division may issue interpretations to be followed during the course of manufactured home installations and inspections.

SECTION 7: INSPECTION PROCEDURES

The division shall adopt a standard Installation Authorization to be used statewide by the Division and certified inspectors, a standard inspection form, and minimum inspection form requirements. Inspection forms shall be maintained a minimum three years from the date of the attachment of the insignia.

Prior to beginning the installation of a manufactured home, the owner, registered or certified installer of a manufactured home shall make an application for an Installation Authorization from the Division, participating jurisdiction, or certified installation inspector. The Installation Authorization is valid for 30-days from the date of issuance and may be extended for an additional 30-days upon written approval of the issuing agency, jurisdiction, or inspector.

Owners, registered, and certified installers shall display an Installation Authorization at the site of the manufactured home to be installed until a certification insignia is attached to the manufactured home certifying compliance. Each authorization for installation will contain the identity of the installer and owner as well as phone number and contact person and identify the installer as owner, registered or certified. The certificate will also include the name, address and telephone number of the agency issuing the Installation Authorization.

A copy of the manufacturer's instructions shall be available at the time of installation and inspection of each new manufactured home. The installer shall be responsible to maintain a copy of the manufacturer's instructions at the installation site. Whenever the applicable standard (manufacturer's instructions, ANSI A225.1-1994, etc.) for the installation of the manufactured home is not present at the time of the inspection, the inspector may fail the inspection and require a re-inspection of the installation. All costs of the inspection and any following re-inspection will be borne by the installer. Where the manufactured home is used or is being relocated, the manufacturer's instructions will be used if available. If the manufacturer's instructions are not available, the applicable adopted alternate standard here in will be used for the installation.

The owner, installer, manufacturer, or retailer shall have the right to be present at any inspection.

All manufactured homes that are found to be in compliance shall have an insignia of installation completed and permanently attached by the inspector making the inspection. Installations made by a certified installer may be inspected and certified by the installer. Such installations do not require inspection by the division or certified inspector. The certified installer shall complete and permanently attach an insignia when the installation is complete and make Insignia Reports to the division as required.

When a manufactured home installation is not found in compliance with the applicable manufacturer's instructions or the installation standard, the installer shall be notified in writing by the inspector. The inspector may at the time of the inspection, include in the inspection report instructions for the installer to call for re-inspection at any stage to prevent cover up of any part of the installation requiring re-inspection by the inspector.

The installer shall pay for any repairs required to bring the installation into compliance. The installer will pay for any subsequent inspections required by the Division or certified inspector.

If a vacant manufactured home fails the installation inspection because of conditions that endanger the health or safety of the occupant, the manufactured home shall not be occupied. The manufactured home shall be visibly posted with notification to prevent occupancy.

If the home fails the installation inspection because of conditions that do not endanger the health or safety of the occupant, the manufactured home may be occupied pending the correction of those defects or deficiencies that served as the basis of the failed inspection.

Application of the certification insignia is evidence that permanent utility service may be established. Permanent insignia application is required prior to occupancy of the home.

If an installation or subsequent repair of an installation by an installer fails to meet the instructions or standards within the time limit allowed by the inspector, the inspector shall notify the installer that the installation is in default. The installer shall be given ten working days after notification of default to bring the installation into compliance. Any independent inspector that knows of an installation that is in default and has not been corrected by subsequent repair shall request that the Division investigate the installation. The Division may revoke, suspend, or fail to renew the registration or certification of the installer and cause the forfeiture of the installer's surety bond on behalf of the owner of the manufactured home for failing to comply with the Division's standards regarding installation of a manufactured home.

SECTION 8: INVESTIGATIONS OF CONSUMER COMPLAINTS

The Division may investigate complaints filed by owners, occupants, dealers, manufacturers or other parties relating to the installation of manufactured homes as necessary to enforce and administer these regulations.

In addition to the required inspections, the Division may inspect the installation of a manufactured home upon written complaint filed by the owner installer, manufacturer, or dealer of a manufactured home. The requesting party prior to the inspection shall pay for the inspection.

A certified inspector or participating jurisdiction shall file a written complaint with the Division against an installer who has been notified that the installation is in default.

If the installation of a manufactured home by an installer has failed the requested compliant inspection, the installer shall reimburse the Division for the cost of the failed inspection. The installer shall also pay for any subsequent repairs necessary to bring the installation into compliance with the manufacturer's instructions or standards. The installer shall also pay for any subsequent inspections required by the Division or the certified inspector. Failure of the installer to pay for any inspections or subsequent repairs deemed necessary by the Division or the independent contractor shall result in the revocation of registration and/or forfeiture of the installer's performance bond on behalf of the owner of the manufactured home.

The Division may designate a certified inspector to make inspection on behalf of the Division to aid in the investigation of consumer complaints.

SECTION 9: SUSPENSION OR REVOCATION

The Division may suspend or revoke the registration or certification of an installer if the person fails to:

- File with the Division and keep in force a letter of credit, certificate of deposit, or surety bond as required; and

- File with the Division and keep in force required liability insurance; and

- Pay assessed inspection costs; and

- Make any subsequent repairs that are necessary to bring the installation into compliance with the manufacturer's instructions or the standards promulgated by the Division.

If within a time period established by the Division, the installer has not corrected any defects or deficiencies in the installation, the Division may revoke the certification or registration of any installer.

The division may temporarily suspend a registration or certification if proof of insurance or surety bond has expired.

The Division may revoke the certification of a Certified Installer and replace it, at its discretion, with the status of Registered Installer. All unused installation insignias must be returned to the Division immediately and the installer will lose the right to purchase and install insignias.

When, in the judgment of the Division, the installer has performed installations of a manufactured home in violation of the program requirements, the Division may revoke or suspend the installer's certification or registration.

When the Division revokes a registration or certification, the installer may reapply as a registered or certified installer one year after the date of the revocation.

Installers whose registration or certification has been revoked or suspended may appeal the Division's decision to the State Housing Board, Technical Review Committee for a hearing.

SECTION 10: REVOCATIONS, SUSPENSION AND APPEAL PROCESS

The Division of Housing may revoke or suspend a certification or registration after notice and hearing pursuant to Section 24-4-104 and 24-4-105, C.R.S.

Judicial review of the certification or registration revocation actions shall be governed by Section 24-4-106, C.R.S.

SECTION 11: INSTALLATION CERTIFICATION INSIGNIA

The Division shall adopt a standard Insignia to be used statewide as a certificate of installation certifying that the manufactured home was installed in compliance with the provisions of this regulation.

The Insignia shall include, but not be limited to, the name, address, and telephone number of the

Division, date the installation was completed, and name, address, telephone number, and registration number of the installer who performed the installation.

Insignias shall remain the property of the state of Colorado and are not subject to refunds.

The insignia shall be permanently attached to the exterior, within 30 inches of the electrical service entrance of the manufactured home that they certify and the insignia is not transferable. When there is no exterior electrical service equipment on the home, the insignia shall be affixed to the exterior of the home near the HUD label or other readily visible location.

The possession of unattached insignias is limited to the Division, participating jurisdictions, certified inspectors and certified installers. Participating jurisdictions, certified inspectors, and certified installers may purchase installation insignias from the Division. Insignias must be kept secure.

SECTION 12: INSTALLATION REPAIR PERIOD

Reference State of Colorado, Division of Housing, Rule #1.

SECTION 13: PROCEDURES, RECORDS AND DATA KEEPING

The Division will establish and maintain a system of databases and procedures for manufactured home installation and inspection necessary for the implementation of these rules and regulations.

The Division will maintain the program rules and regulations in electronic format. Where feasible, the Division will make use of a web page to distribute information, make available forms and applications, and list participating jurisdictions, registered installers, certified installers, and certified independent inspectors.

ATTEST:

William Timmermeyer, Director
Colorado Division of Housing

Date

Rick Padilla, Chairperson
Colorado State Housing Board

Date

SCHEDULE "A"
INSTALLATION PROGRAM FEES

All fees except inspection fees are due in advance and must accompany the application. Fees shall not be subject to refund.

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| 1. | Installer Registration: | \$100.00 |
| 2. | Installer Certification: | No Charge |
| 3. | Inspector Certification: | \$100.00 |
| 4. | Installation Certification Insignia Fee: | \$40.00 |
| 5. | Inspection Fees: | |
| | A. Rough or Final Installation Inspection Fees: | \$175.00 |
| | B. Oversight inspection fee: | \$230.00 |
| | B. Red Tag fee: | \$250.00 |
| 6. | Waiver of Fees for Government Assisted Housing; with State Housing Board concurrence, the Division of Housing may waive inspection and insignia fees for units to be subsidized under local, state or federal housing programs for low-income households. | |

SCHEDULE “B”

The State Housing Board hereby adopts and incorporates by reference, the following standards and national recognized codes as the “Colorado Manufactured Housing Installation Code”. Materials incorporated by reference are those in existence as of the date of this resolution and do not include later amendments. Materials incorporated by reference is available for public inspection during regular business hours at the Division of Housing, 1313 Sherman Street, Room 518; Denver, Colorado 80203; or may be examined at any state publications depository library. Parties wishing to inspect these materials should contact the Program Manager, Housing Technology and Standards Section, located at the Office of the Division of Housing.

Colorado Manufactured Housing Installation Codes shall be:

1. Primary Standard (Required for new homes):
 - A. The Home Manufacturer’s written Installation Instructions.
 - B. Local requirements approved in advanced by the Division.
2. Alternate Standards:
 - A. Permanent Foundations Guide for Manufactured Housing (HUD–7584), September 1996 Edition, published by the United States Department of Housing and Urban Development.
 - B. NCSBCS/ANSI A225.1 – 1994, 1999 Edition, published by the National Conference of States of Building Codes and Standards, Inc.
 - C. Local requirements approved in advance by the Division.

- D. The following Amendments by addition, deletion, revision, and exception are made to the Permanent Foundations Guide for Manufactured Housing (HUD-7584), September 1996 Edition:

APPENDIX B – FOUNDATION DESIGN LOAD TABLES

In the multi-section tables under the marriage wall opening width (ft.), the values given for required effective footing area – Af&g (sq.ft.), should be divided by 2.

- E. The following Amendments by addition, deletion, revision, and exception are made to NCSBCS/ANSI A225.1 – 1994:

AMENDMENTS MANUFACTURED HOME INSTALLATIONS ANSI A225.1 - 1994

2 Definitions

Architect: A State of Colorado Licensed Professional Architect.

Carport: An awning or shade structure for a vehicle(s) that is freestanding and entirely open on two or more sides, and not structurally attached to a Manufactured Home.

Engineer: A State of Colorado Licensed Professional Engineer.

Geologist: A State of Colorado Licensed Professional Geologist or Engineer.

3.1.4 Fire separation distance

The distance a home must be sited from other structures depends on its fire resistance rating and on local requirements. Contact the home's manufacturer or the inspection agency identified on the data plate for fire resistance rating information. In addition, contact the authority having jurisdiction for minimum fire separation distances.

3.2.3 Soil

Use a pocket penetrometer or other methods acceptable to the local jurisdiction having authority. The proper penetrometer reading must be taken in moist soil, after removing all organic material to undisturbed earth, at the foundation bearing level. The installer is responsible for documenting soil types and bearing capacities.

3.4.4 Gutters and downspouts

When gutters downspouts are installed, direct the run off away from the home. Splash blocks and downspout extensions will enhance drainage away from the home.

4.0.1 Foundation Requirements

All exterior walls, marriage walls, marriage wall posts, columns, and piers must be supported on an acceptable foundation system that must be of sufficient design to support safely, the loads imposed, as determined by the character of the soil.

4.0.2 Height Above Grade

Foundation walls shall extend at least 6" above the adjacent finished grade.

4.0.3 Minimum Foundation Wall and Wall Footing Thickness

The minimum concrete or masonry foundation wall width shall be 6 inches. The minimum reinforced concrete footing thickness shall be 3-1/2 inches or 1-1/2 times the length of the footing projection from the foundation wall, whichever is greater.

4.0.4 Crawl Space Requirements (Basementless Spaces)

4.0.4.1 Height Requirement

Ground level must be at least 18 inches below the bottom of wood floor joists and 12 inches below the bottom of the chassis beams. (See 4.1.3.3).

4.0.4.2 Interior vs. Exterior Ground Level

The interior ground level must be above the outside finish grade with a minimum 2% slope to the exterior unless:

1. Adequate gravity drainage to a positive out fall is provided, or
2. A Professional Engineer or Architect certifies the permeability of the soil and the water table is such that water will not collect in the crawl space, or
3. A full perimeter foundation drain and sump pit is provided.

4.1.3.1 Load Bearing Capacity

Replace Table 4.1 and 4.2 with Table A, Table B, and Table C.

4.1.3.2 Configuration

Select manufactured pier heights so that the adjustable risers do not extend more than 2 inches when finally positioned.

All piers must rest on footings (see 4.2) that extend below the frost line (see 4.2.2 for exceptions to placement) and are placed on either undisturbed soil or compacted fill except for interior heated areas, which may bear above frost line on undisturbed soil or compacted fill.

4.1.4 Design Procedures

Pier height is to be measured from top of the footing.

4.3 Permanent Foundations

Permanent foundations shall be designed, permitted, constructed, and inspected in accordance with the local building department requirements.

For those areas of the State of Colorado without an adopted building code, foundations shall be constructed in accordance with a professional engineered design, or the Permanent Foundations Guide for Manufactured Housing - September 1996, and shall be inspected and certified by the foundation designer.

4.4.2 Severe Wind Areas

Consult the authority having jurisdiction or a Professional Engineer or Architect.

5.3 Interconnection of multi-section homes

Table 5-1 Normal Home Installations (Single- Or Multi-section Homes)

Piers-Ground anchors:

The manufactured home rests on piers of concrete block; formed-in-place concrete; permanent wood; or steel pedestals on permanent wood, crushed stone, approved ABS, or concrete footers. The ground anchors are embedded at an angle in the soil to act as dead-men to resist the horizontal and vertical wind forces. Straps are tied to the frame, with or without over-the-top straps.

5.5 Anchoring Instructions

After blocking and leveling, the installer shall secure the manufactured home against the wind. The type of installation is the determining factor in deciding how this should be done, as is described in the following sections.

5.5.1.1 Number and location of anchors

The home must be anchored to the ground in order to resist overturning and lateral movement (sliding) of the home caused by the forces imposed by the wind. The Tie Down Anchoring System described in this section is one acceptable method of anchoring the home to withstand its wind load.

Unless otherwise noted, all Tie Down and Anchoring Instructions are for homes with roof pitches, which do not exceed 20 degrees (4.3 inches in 12 inches).

A Registered Colorado Professional Engineer, Architect or a nationally recognized testing laboratory shall certify the Tie-Down Anchoring Devices. They must be capable of resisting an allowable working load equal to or exceeding 3,150 pounds and shall be capable of withstanding a 50 percent overload (4,725 pounds total) at an angle of 45 degrees from the vertical. Ground anchors must be installed as specified by the

Anchor Manufacturer.

Anchoring Equipment exposed to weather shall have a resistance to weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.3 ounces per square foot of surface coated. Slit or cut edges of zinc-coated strapping do not need to be zinc coated.

Straps shall be Type 1, Finish B, Grade 1 steel strapping, 1-1/4 inches wide and 0.035 inches in thickness, certified by a Registered Professional Engineer or Architect, or listed as conforming with ASTM Standard Specification D3953-91, Standard Specification for Strapping, Flat Steel and Seals.

The home must be in its final position with sections fastened together prior to installing Tie-Down Equipment.

5.5.1.2 Ground Anchors

Replace figure 5-2 with Table D.

Before Ground Anchor Installation, determine that the Anchors will not be close to any underground utility lines.

The Ground Anchor Spacing and Installation Method were developed by Manufactured Housing Research Alliance.

Ground Anchors shall be installed in accordance with the manufacturer's written instructions. The following is one example: Install the anchors at the locations selected from Table D when the home manufacturer's installation instructions are not available.

5.5.1.3 Steps for Proper Ground Anchor Installation

These steps must be followed to use Table D:

1. Place the Anchors approximately four inches to the inside of the exterior wall line of the home or a sufficient distance to avoid interference with the skirting (See Diagram).

2. Hold the Anchor at an angle of approximately 15 degrees off of vertical so that the head of the Anchor is just outside the sidewall (See Diagram).
3. Install the Anchor to a depth of approximately one-third ($1/3$) the Anchor length.
4. Place a Stabilizer Plate (all lateral loaded Ground Anchor must have Stabilizer Plates) of the size indicated on the chart to the inside of the Anchor Shaft (side of Shaft toward center of house) and two inches from the shaft (See Diagram).
6. Drive the Stabilizer Plate into the ground until the top of the Plate is flush with the surface of the ground.
7. Install the Anchor to its full depth.
8. Attach the Anchor Head to the chassis main rail with approved strapping and connection hardware in accordance with the Strap Manufacturer's Instructions.
9. Pretension the Anchor by pulling it up to the Stabilizer Plate. Pull the Anchor approximately $1/2$ -inch more while it is in contact with the Plate using the Strap and take-up bolt to move the Anchor Head.
10. After all Anchors have been installed and pretensioned, recheck all Anchor Straps to assure that they are tight and that the Anchor Shafts have remained in contact with the Stabilizer Plate.

5.5.1.5 Important Notes about the Anchor Spacing Selector

1. For homes with 8-foot sidewalls, reduce the Anchor Spacing by $1/2$ -foot.
2. Do not use this chart for homes with roof slopes greater than 20 degrees (approximately 4-in-12).
3. Anchors are required within two feet of each end wall.

6.8 Skirting

Skirting, if used or required, shall be of durable materials suitable for exterior exposures. Skirting must not be attached in a manner that can cause water to be trapped between the siding or trim to which it is attached. Most local codes do not permit wood, including lumber and all wood siding used for skirting, to be used within 6 inches of the ground unless it is pressure treated to prevent decay and termite infestations. Other materials and products may be used in accordance with the manufacturer's listing and written instructions.

Except as specifically permitted by the manufacturer, an engineer, or an architect, a uniform 6-mil polyethylene opaque sheet material or other acceptable vapor barrier material shall be installed on the ground surface beneath the home to further reduce moisture. When installed the integrity of the vapor barrier shall be maintained. Where an acceptable ground vapor barrier is installed and one such ventilation opening is within 3 feet of each corner of the home, the total area of ventilation openings may be reduced to one square foot for every 300 square feet of the home's floor area. Where local codes have minimum ventilation requirements for crawl spaces, these requirements shall apply to homes with skirting and continuous foundations.

Dryer vents and air conditioning condensation drains must pass through the skirting to the outside.

8.1 Proper procedures

Consult local, county, and/or state authorities before connecting any utilities. Only qualified service personnel, familiar with local codes and licensed where required, should make utility connections and conduct tests.

8.3.4 Testing procedures

Even though the drainage system was tested at the factory, it shall be rechecked for leaks after installation at the site. This shall be accomplished by capping the building drain line, filling it with water, and holding it 15 minutes. In freezing conditions, add antifreeze to the P-traps.